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*Mortality and Chief Diseases of the Troops under the Madras Government, European and Native, from the Years 1842 to 1846 inclusive, compared with the Mortality and Chief Diseases of 1847. By LIEUT.-COLONEL W. H. SYKES, F.R.S.**

THE following tables are extracted from the official Report of the Medical Board to the Madras Government, and comprise the Royal as well as the Company's troops, and possess great interest, from exhibiting, separately, the mortality from nine of the principal diseases to which the troops were subject in each division of the army, so that the local character of the climate of the respective stations is shown, as influencing the development of particular diseases, or mitigating or increasing their fatal effects. That these local climatorial influences are important, is manifested by the facts, that the per centage mortality for five years, amongst Europeans, varies from 2·353 per cent., in the Mysore Division, to nearly 6 per cent. in the Ceded Districts and Hyderabad Subsidiary Forces, and 6·022 per cent. in the Northern Division; and amongst the Native troops, from 0·808 per cent. in Malabar and Canara, to 8·937 per cent. in China. To enable the eye to follow uninterruptedly the effects of the same disease in different localities, I have drawn up tables (Tables LIII. to LVI.) which place the per centage mortality of each disease in the same vertical columns, and a glance from the top to the bottom of the column shows at once the relative intensity at each place. For instance, amongst the Europeans, with the exception of cholera, there is but one station (Nagpore) where the mortality from fevers exceeds 1 per cent. of the strength, and there are but three stations (Malabar and Canara, Hyderabad, and the Tenasserim provinces) where the mortality exceeds 1 per cent. from dysentery. In the other seven diseases, there are but two instances where the mortality exceeds a half per cent. The liver disease, usually considered so formidable to European constitutions, at only one station (Hyderabad) amounts to seven-tenths per cent. Amongst the Native troops, again, excepting cholera, there is not a single station in Madras at which the other eight diseases produced a mortality of even a half per cent. Fevers in the Tenasserim provinces caused a mortality of six-tenths per cent.; and rheumatism, at Aden, of five-tenths. China, unhappily, stands by itself. During the six years the Madras Native troops were there, fevers, diarrhoea, and dysentery, told with fatal effects. This table, then, and a similar table for the number of cases, afford the means of comparing the intensity of the same diseases at different stations; it remains for the physicist to inquire how far the local circumstances of soil, mephitic marshes, periodical winds, moisture or dryness, or other atmospheric phenomena, ventilation, drainage, diet, modes of living, or social or moral habits, appear to influence the several diseases; and knowledge so obtained could necessarily be

* I do not purpose making any comparisons between the results in the following tables and those shown in the valuable Contribution to the Vital Statistics of the Madras Army, by the late Sir James Annesly. It will suffice to say that the mortality amongst the European troops is materially lessened in modern times, while that of the Native troops remains much the same.

turned to profitable account, in bringing into operation such expedients as might affect the agents within human control. That a mere change of climate, even within a narrow range of latitude, may give a very considerable development to diseases which were previously scarcely manifest, is shown in the Native troops of the Madras army sent to serve in China. In the Madras territories, the per centage mortality amongst the Sepoys from diseases of the chest, which during the five years from 1842 to 1846, could not be counted by the second place of decimals per cent. (except in the Centre Division), and ranging from 1 in 1181 men to 1 in 5773, mounted in China to the first places of decimals, or 1 in 517. That this is no accidental circumstance, is indicated by the period of time over which the mortality runs. In 1847, there was only 1 death from diseases of the lungs in 888 Sepoys; still it is nearly seven times greater than in India. The same observations apply with great force to fevers, diarrhœa, and dysentery. In the Tenasserim provinces, there was only 1 death from diarrhœa in 405 men; while in China, there was 1 in 34 men. But I am anticipating an analytical review of the tables.

Another characteristic of the Medical Report is a table of the mortality amongst Europeans after certain periods of residence in India. Although relating to limited numbers, it may be of some importance to the actuary in estimating the value of European life in the tropics, at least as far as the effects of climate upon Europeans can be estimated, with the European soldier as a type.

A third characteristic of the Medical Report is the result of experiments to determine the amount of heat to which the soldier's head is exposed on the line of march, in which the helmet, shako, or Sepoy's turban, is without or with a white covering, and the interior cavity of the head gear without or with moisture: the results are highly instructive.

The following tables, from 1842 to 1846, inclusive, relate to the diseases and mortality of 59,218 Europeans, embracing those of the Royal army as well as those of the Company, and 363,726 natives; and for the year 1847, to 11,303 Europeans and 67,015 native soldiers. These masses are classed in fourteen divisional commands, forces, and stations, namely, Presidency Division, Centre Division, Southern Division, Northern Division, Mysore Division, Malabar and Canara, The Ceded Districts, Hyderabad Subsidiary Force, Nagpore Subsidiary Force, the Tenasserim provinces, Saugor, Southern Mahratta country, Aden, and China; so that, in fact, the area within which the troops are serving extends from the longitude of Aden $45^{\circ}.3$, to the longitude of Hong Kong $114^{\circ}.22$, and from north latitude $8^{\circ}.5$ (Cape Cormorin), up to $22^{\circ}.50$ north latitude in Saugor; the area consequently embracing both monsoons and many varieties of climate. Nevertheless, the European troops serving under the Madras Government have a very considerably smaller mortality than is experienced by the troops of the Bengal and Bombay Governments; and this result is in confirmation of the facts I formerly published in the Society's Journal, respecting the mortality of the Indian army. The present tables, however, embrace the Royal as well as the Company's troops, which the former tables did not. I will not dwell upon the returns from the respective divisions, but, after the insertion of the tables, give a compendious view of the results they offer.

PRESIDENCY DIVISION.

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases from Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

I.—EUROPEANS.																						
Strength.	Cholera.		Fever.		Liver.		Diarrhea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Presidency Division	87	49	1,459	9	537	13	638	9	661	40	100	14	772	3	1,042	1	28	2	5,314	140	9,947	189
Per centage of Treated to Strength	1.176		19.739		7.261		8.492		8.938		1.352		10.439		14.090		0.378		71.859		134.509	
Ditto of Deaths to do.	0.662		0.121		0.175		0.143		0.540		0.189		0.040		0.013		0.027		1.893		2.555	
Ditto do. to Treated	56.321		0.616		2.420		1.433		6.051		14.000		0.388		0.095		7.142		2.634		1.900	
II.—NATIVES.																						
Presidency Division	484	213	3,320	55	20	8	436	45	202	14	90	4	1,161	18	588	5	142	20	6,453	382	12,326	500
Per centage of Treated to Strength	2.095		14.376		0.129		1.888		0.874		0.359		5.027		2.546		0.614		27.943		55.375	
Ditto of Deaths to do.	0.922		0.238		0.034		0.194		0.060		0.017		0.077		0.021		0.086		1.654		2.165	
Ditto do. to Treated	44.008		1.656		26.666		10.321		6.930		4.444		1.550		0.850		14.084		5.919		4.056	
III.—EUROPEANS.																						
Presidency Division	2	2	116	4	54	7	154	2	48	7	17	5	75	...	342	...	3	...	811	27	1,694	41
Per centage of Treated to Strength	0.149		8.669		4.035		11.509		3.587		1.270		5.605		25.560		0.224		60.612		126.606	
Ditto of Deaths to do.	0.149		0.298		0.523		0.149		0.523		0.373		...		...		...		2.017		3.064	
Ditto do. to Treated	100.000		3.448		12.962		1.298		14.383		29.411		...		...		...		3.329		2.420	
IV.—NATIVES.																						
Presidency Division	19	11	391	9	8	2	66	9	24	1	14	3	218	3	110	...	42	6	892	42	1,811	71
Per centage of Treated to Strength	0.437		9.005		0.184		1.520		0.552		0.322		5.020		8.533		0.967		20.543		41.708	
Ditto of Deaths to do.	0.253		0.207		0.046		0.161		0.023		0.069		0.069		...		0.138		0.967		1.635	
Ditto do. to Treated	57.894		2.301		25.000		10.606		4.166		21.421		1.376		...		14.285		4.708		3.920	

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

CENTRE DIVISION.

V.—EUROPEANS.																							
	Strenght.	Cholera.		Fever.		Liver.		Diarrhea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Centre Division	11,088	278	165	1,595	23	579	19	1,124	38	1,225	67	205	24	975	10	1,615	10	46	10	7,642	366	14,655	470
Per centage of Treated to Strength		2,507	14,384			5,221	0,171	10,137		11,047		1,848		8,793		14,565		0,414		68,921		132,169	
Ditto of Deaths to do.		1,488	0,207			0,342	0,604			5,469		0,216		0,090		0,090		0,090		3,300		4,238	
Ditto do. to Treated		59,352	1,442			3,281	3,380					11,707		1,025		0,619		21,739		4,789		3,207	
VI.—NATIVES.																							
Centre Division	31,783	535	237	4,088	83	27	1	799	62	339	34	225	36	2,067	32	738	14	238	54	9,056	553	16,643	711
Per centage of Treated to Strength		1,683	12,862			0,084	2,513		1,066		0,707		6,503		2,321		0,748		28,493		52,364		
Ditto of Deaths to do.		0,745	0,261			0,003	0,195		0,106		0,113		0,100		0,044		0,169		1,739		2,237		
Ditto do. to Treated		44,299	2,050			3,703	7,759		10,629		16,000		1,548		1,897		22,689		6,106		4,272		
For the Year 1847.																							
VII.—EUROPEANS.																							
Centre Division	2,943	...	...	675	9	146	13	217	4	486	56	65	5	234	2	454	3	13	1	2,390	93	3,856	124
Per centage of Treated to Strength		...	...	22,935	...	4,960	7,373		16,513		2,208		7,950		15,426		0,441		77,811		131,022		
Ditto of Deaths to do.		...	...	0,305	...	0,441	1,902		0,169		0,067		0,067		0,101		0,083		3,160		4,213		
Ditto do. to Treated		...	...	1,333	...	8,904	1,843		11,522		7,692		0,854		0,660		7,692		4,061		3,215		
VIII.—NATIVES.																							
Centre Division	6,388	18	6	548	9	9	3	69	5	69	...	25	3	305	5	172	1	57	15	1,372	47	2,789	85
Per centage of Treated to Strength		0,286	8,715			0,148	1,097		1,097		0,397		4,850		2,735		0,906		20,229		44,354		
Ditto of Deaths to do.		0,095	0,148			0,047	0,079		0,079		0,047		0,047		0,015		0,015		0,747		1,351		
Ditto do. to Treated		33,333	1,642			33,333	7,246		7,246		12,000		1,639		0,581		0,581		26,315		3,694		

VIII.—NATIVES.

VII.—EUROPEANS.

For the Year 1847.

VI.—NATIVES.

V.—EUROPEANS.

NORTHERN DIVISION.

TABLE Showing the Admissions and Deaths from Nine Principal Diseases amongst the European and Native Troops for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XIII.—EUROPEANS.																							
	Strength.	Cholera.		Fever.		Liver.		Diarrhœa.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Northern Division	797	3	2	37	1	21	1	31	6	28	4	40	6	60	2	28	1	10	2	258	25	635	48
Per centage of Treated to Strength		0.376	4.642	2.634	0.125	3.889	0.501	3.513	5.018	7.528	0.250	0.752	15.000	3.333	0.125	3.513	1.254	0.250	30.000	33.371	3.136	79.673	
Ditto of Deaths to do.		0.250	0.125	0.752	0.501	0.501	0.752	0.501	0.752	0.250	0.752	0.501	0.752	0.250	0.752	0.125	0.250	0.250	0.250	9.689	3.136	6.022	
Ditto do. to Treated		66.666	2.702	4.761	19.354	19.354	14.285	14.285	15.000	3.333	0.250	0.752	15.000	3.333	0.125	3.571	20.000	20.000	20.000	9.689	7.559	7.559	
XIV.—NATIVES.																							
Northern Division	41,348	824	355	11,770	145	32	2	438	13	370	28	412	35	4,089	48	2,166	14	978	102	21,079	742	31,769	874
Per centage of Treated to Strength		1.992	28.465	0.077	0.004	0.069	0.084	1.059	0.031	0.069	0.069	0.084	0.084	0.116	0.116	5.238	0.246	2.365	2.365	50.979	1.794	76.883	
Ditto of Deaths to do.		0.858	0.350	1.331	0.250	0.250	0.250	2.968	2.968	7.567	8.495	8.495	8.495	1.173	0.646	10.429	10.429	10.429	10.429	3.520	2.751	2.751	
Ditto do. to Treated		43.082	1.231	0.250	0.250	0.250	0.250	2.968	2.968	7.567	8.495	8.495	8.495	1.173	0.646	10.429	10.429	10.429	10.429	3.520	2.751	2.751	
For the Year 1847.																							
XV.—EUROPEANS.																							
Northern Division	168	...	...	15	1	1	...	7	2	4	...	8	1	7	...	9	...	2	...	53	4	126	6
Per centage of Treated to Strength		...	8.928	0.595	0.595	0.595	...	4.166	2.380	2.380	...	4.761	...	4.166	...	5.357	...	1.190	...	31.547	2.380	75.000	
Ditto of Deaths to do.		...	0.595	...	...	...	...	1.190	...	...	...	0.595	...	...	...	...	...	...	...	2.380	7.547	3.571	
Ditto do. to Treated		...	6.666	...	...	...	...	28.571	...	...	...	12.500	...	...	...	...	...	...	...	7.547	4.761	4.761	
XVI.—NATIVES.																							
Northern Division	9,990	3	1	7,876	78	14	2	163	8	273	30	69	11	999	9	393	2	269	17	10,059	158	13,255	194
Per centage of Treated to Strength		0.030	78.832	0.140	0.080	0.080	0.080	1.638	2.732	2.732	0.690	0.690	0.690	9.999	0.999	3.933	0.020	2.692	2.692	100.683	1.581	132.672	
Ditto of Deaths to do.		0.010	0.780	0.080	0.080	0.080	0.080	0.080	0.300	0.300	0.110	0.110	0.110	0.090	0.090	0.020	0.020	0.170	0.170	1.941	1.581	1.941	
Ditto do. to Treated		33.333	0.990	14.285	0.990	0.990	0.990	4.907	10.989	10.989	15.942	15.942	15.942	0.900	0.900	0.508	0.508	6.319	6.319	1.570	1.570	1.463	

MYSORE DIVISION.

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases, from 1842 to 1846 (Five Years) inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XVII.—EUROPEANS.																							
	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsey.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Mysore Division	9,261	127	44	1,233	13	663	22	391	8	1,104	64	105	13	669	3	2,468	4	12	2	26,772	183	13,186	218
Per centage of Treated to Strength		1	371	13	313	7	159	4	222	11	920	1	133	7	223	26	649	0	129	73	123	131	584
Ditto of Deaths to do.		0	475	0	140	0	345	0	086	0	691	0	140	0	032	0	043	0	021	1	976	2	353
Ditto do. to Treated		34	645	1	054	4	826	2	046	5	797	12	380	0	448	0	163	16	666	2	702	1	788
XVIII.—NATIVES.																							
Mysore Division	33,337	1,351	587	5,813	81	60	7	660	22	303	15	179	19	1,691	16	800	6	108	17	10,965	770	20,502	879
Per centage of Treated to Strength		3	992	17	179	0	177	1	950	0	895	0	529	4	997	2	364	0	319	32	405	60	590
Ditto of Deaths to do.		1	734	0	239	0	020	0	065	0	044	0	056	0	047	0	017	0	050	2	275	2	591
Ditto do. to Treated		43	449	1	393	11	666	3	333	4	950	0	946	10	614	0	750	15	740	7	022	4	277
XIX.—EUROPEANS.																							
Mysore Division	1,866	28	19	211	5	106	3	163	1	221	10	41	1	114	...	768	...	2	...	1,644	39	2,696	49
Per centage of Treated to Strength		1	500	11	307	5	680	8	735	11	843	2	197	6	109	40	621	1	106	88	702	144	480
Ditto of Deaths to do.		1	018	0	267	0	159	0	053	0	035	...	...	...	...	...	...	...	...	2	090	2	625
Ditto do. to Treated		67	857	2	369	2	830	0	613	4	524	2	439	...	...	...	...	...	...	2	372	1	817
XX.—NATIVES.																							
Mysore Division	8,313	5	2	3,106	10	21	1	119	2	93	5	45	4	474	1	350	...	100	6	4,313	31	7,025	57
Per centage of Treated to Strength		0	060	37	363	0	252	1	451	1	118	0	541	5	701	4	210	1	202	51	882	84	506
Ditto of Deaths to do.		0	024	0	120	0	012	0	024	0	060	0	048	0	012	...	...	...	...	0	072	0	685
Ditto do. to Treated		40	000	0	321	4	761	1	650	5	376	8	888	0	210	...	...	6	000	0	718	0	811

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XXI.—EUROPEANS.																							
	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracic.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.		
Malabar and Canara	4,843	26	13	396	7	419	20	508	5	978	71	37	10	331	1	932	1	11	3	3,638	131	7,845	150
Per centage of Treated to Strength		0.536		8.176		8.651		10.489		20.194		0.763		6.834		19.244		0.237		76.118		161.986	
Ditto of Deaths to do.		0.368		0.144		0.412		0.103		1.466		0.206		0.020		0.020		0.061		2.704		3.097	
Ditto do. to Treated		50.000		1.767		4.773		0.984		7.289		27.027		0.302		0.107		27.272		8.600		1.912	

XXII.—NATIVES.																							
Malabar and Canara	18,935	38	12	2,474	34	51	6	355	10	230	6	123	10	1,063	5	510	3	77	12	4,941	98	10,734	153
Per centage of Treated to Strength		0.200		13.165		0.269		1.874		1.214		0.649		5.719		2.693		0.406		26.094		56.688	
Ditto of Deaths to do.		0.163		0.179		0.081		0.052		0.081		0.052		0.102		0.015		0.063		0.517		0.908	
Ditto do. to Treated		51.578		1.374		11.764		2.816		2.608		8.130		0.461		0.588		15.584		1.983		1.425	

For the Year 1847.

XXIII.—EUROPEANS.																							
Malabar and Canara	1,110	...	...	87	1	146	2	169	...	179	19	27	8	195	2	289	...	2	...	1,694	32	2,184	37
Per centage of Treated to Strength		...		7.837		13.753		15.235		16.126		2.432		17.567		26.086		0.180		98.558		196.756	
Ditto of Deaths to do.		...		0.090		0.180		0.171		1.711		0.720		0.180		...		...		3.333		3.303	
Ditto do. to Treated		...		1.149		1.369		...		10.614		29.629		1.025		...		...		2.925		1.694	

XXIV.—NATIVES.																							
Malabar and Canara	3,648	...	...	554	10	7	1	83	4	51	3	22	1	235	2	163	1	37	6	1,142	28	2,351	39
Per centage of Treated to Strength		...		15.186		0.197		2.275		1.398		0.608		6.169		4.468		1.014		31.304		61.705	
Ditto of Deaths to do.		...		0.274		0.057		0.109		0.062		0.037		0.164		0.027		0.054		0.767		1.069	
Ditto do. to Treated		...		1.805		14.285		4.819		5.882		4.545		0.888		0.613		16.216		2.451		1.732	

CEDED DISTRICTS.

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XXV.—EUROPEANS.																							
	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Ceded Districts	3,558	378	157	1,419	4	298	6	220	2	354	17	61	4	411	...	1,073	1	10	2	4,224	193	5,893	212
Per centage of Treated to Strength		10.633		39.861		8.375		6.183		9.949		1.714		11.551		30.157		0.281		118.718		165.345	
Ditto of Deaths to do.		4.412		0.112		0.168		0.056		0.477		0.112		...		0.038		0.056		5.424		5.958	
Ditto do. to Treated		41.534		0.281		2.013		0.909		4.802		6.557		...		0.083		20.000		4.569		3.603	
XXVI.—NATIVES.																							
Ceded Districts	24,057	899	388	6,199	58	32	3	377	16	271	17	88	10	2,925	21	928	3	175	34	11,064	550	17,461	598
Per centage of Treated to Strength		3.736		25.767		0.138		1.567		1.126		0.365		8.708		8.857		0.727		45.990		72.581	
Ditto of Deaths to do.		1.612		0.241		0.012		0.066		0.070		0.041		0.087		0.012		0.141		2.386		2.485	
Ditto do. to Treated		43.159		0.935		9.375		4.244		6.270		11.363		1.002		0.223		19.428		4.971		3.424	
For the Year 1847.																							
XXVII.—EUROPEANS.																							
Ceded Districts	989	...	...	195	1	114	6	157	2	61	1	21	1	106	...	577	...	2	...	1,233	11	1,997	12
Per centage of Treated to Strength		...		19.716		11.526		15.874		6.167		2.123		10.717		58.341		0.202		124.671		201.921	
Ditto of Deaths to do.		...		0.101		0.606		0.202		0.101		0.101		...		...		...		1.112		1.213	
Ditto do. to Treated		...		0.512		5.263		1.273		1.639		4.761		...		...		...		0.892		0.600	
XXVIII.—NATIVES.																							
Ceded Districts	4,661	5	...	1,812	24	2	2	60	1	46	2	10	...	375	...	201	...	33	8	2,544	27	3,735	42
Per centage of Treated to Strength		0.107		38.873		0.042		1.287		0.966		0.214		8.045		4.312		0.708		54.580		80.133	
Ditto of Deaths to do.		...		0.300		0.042		0.021		0.042		...		...		...		0.171		0.579		0.901	
Ditto do. to Treated		...		0.772		100.000		1.666		4.347		...		...		...		2.424		1.061		1.124	

HYDERABAD SUBSIDIARY FORCE.

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XXIX.—EUROPEANS.																							
	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Hyderabad Subsidiary	6,800	97	46	2,243	30	773	49	923	17	1,855	171	149	9	702	5	1,952	5	19	6	8,713	338	13,075	355
Per centage of Treated to Strength		1.436		32.985		11.367		13.573		27.279		2.191		10.333		28.705		0.379		128.132		192.279	
Ditto of Deaths to do.		0.676		0.441		0.720		0.250		2.514		0.132		0.073		0.073		0.088		4.970		5.661	
Ditto do. to Treated		47.422		1.337		6.338		1.841		9.218		6.040		0.712		0.256		31.578		3.879		2.914	
XXX.—NATIVES.																							
Hyderabad Subsidiary	47,935	1,969	804	15,452	104	88	9	868	21	630	31	203	23	2,676	17	1,463	6	90	15	23,439	1,030	34,819	1,148
Per centage of Treated to Strength		4.107		32.235		0.183		1.810		1.314		0.423		5.582		3.052		0.187		48.897		73.637	
Ditto of Deaths to do.		1.677		0.216		0.018		0.043		0.064		0.047		0.035		0.012		0.031		2.148		2.394	
Ditto do. to Treated		40.833		0.673		10.227		2.419		4.930		11.330		0.635		0.410		16.666		4.394		3.297	
For the Year 1847.																							
XXXI.—EUROPEANS.																							
Hyderabad Subsidiary	1,343	1	1	570	4	72	8	250	2	191	14	18	6	82	...	533	1	...	...	1,717	36	2,221	44
Per centage of Treated to Strength		0.074		42.442		5.861		18.615		14.221		1.340		6.105		39.687		...	...	127.848		165.376	
Ditto of Deaths to do.		0.074		0.297		0.595		0.148		1.042		0.446		...		0.074		...	...	2.680		3.276	
Ditto do. to Treated		100.000		0.701		11.111		0.800		7.329		33.333		...		0.187		...	...	2.096		1.981	
XXXII.—NATIVES.																							
Hyderabad Subsidiary	8,895½	63	15	2,030	20	8	1	79	5	79	3	25	6	375	1	273	1	19	1	2,951	55	4,660	68
Per centage of Treated to Strength		0.708		22.820		0.089		0.888		0.888		0.281		4.215		3.068		0.213		33.174		52.386	
Ditto of Deaths to do.		0.168		0.324		0.011		0.056		0.033		0.067		0.011		0.011		0.033		0.618		0.764	
Ditto do. to Treated		23.809		0.985		12.500		6.329		3.797		24.000		0.266		0.366		15.789		1.863		1.459	

XXXIII.—STATEMENT Showing the Prevailing Diseases of Her Majesty's 84th Regiment, 1st Battalion, and C Troop, Horse Artillery, for 1847.

EUROPEAN TROOPS.

CORPS.	Average Strength.	Remained.	Admitted.	Discharged.	Died.	Remaining.	Cholera.	Dysentery.	Fever.	Hepatic Diseases.	Disease of the Eye.	Rheumatism.	Veneral.	Other Complaints.	Average proportion of Sick in Hospital to numerical Strength, per cent.	Proportion of Deaths to the total Sick Treated, per cent.
Her Majesty's 84th Regiment	1,052	100	1,749	1,743	37	69	1	130	432	44	37	65	486	554	166½	2.0
1st Battalion Artillery.....	146	17	212	216	6	7	...	20	43	18	1	6	20	104	145½	2.62
C Troop Horse Artillery	103	7	153	152	1	7	...	1	74	3	3	6	18	48	156½	0.62

XXXIV.—TABLE Showing the Principal Diseases of the Nagpore Force for Five Years.

DISEASES.	EUROPEANS.										NATIVES.									
	Average of Strength.....		1,315		1,304		1,331		358		6,816		6,420		6,176		5,951		5,793	
	Years.....		1843.		1844.		1845.		1846.		1847.		1848.		1849.		1850.		1851.	
Admitted.	1,474	33	1,873	39	1,437	59	1,968	47	374	4	1,781	38	2,489	30	1,404	74	2,456	133	1,647	20
Died.	13	8	902	22	751	21	975	12	221	...	1,073	16	1,717	15	864	14	1,704	23	1,269	10
Fever.	580	87	88	1	102	4	111	8	18	...	8	...	6	1	10	2	10	...	7	1
Hepatitis	67	3	133	6	134	16	158	3	37	...	173	4	291	2	211	3	198	...	206	6
Rheumatism	151	8	123	...	207	6	203	6	32	4	50	1	59	...	77	3	60	3	93	1
Dysentery	141	7	1	1	11	6	32	17	...	...	16	19	9	...	153	46	244	101	...	...
Cholera	2	1	1	9	172	11	118	...	...	...	78	55	...	...	64	3	64	2	...	...
Diarrhoea	181	4	258	...	109	...	371	1	...	...	374	...	842	2	85	3	176	1	...	...
Syphilis	352	2	368	...	109	...	371	...	24	...	...	...	...	...	...	...	...	...	...	...
Total	1,474	33	1,873	39	1,437	59	1,968	47	374	4	1,781	38	2,489	30	1,404	74	2,456	133	1,647	20

NAGPORE SUBSIDIARY FORCE.
TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases from Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XXXV.—EUROPEANS.													
	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Nagpore Subsidiary	5,394	58	31	3,515	70	421	17	819	24	760	40	66	3
Per centage of Treated to Strength		1.075		65.164		7.804		15.138		14.089		1.223	
Ditto of Deaths to do.		0.574		1.397		0.315		0.741		0.741		0.055	
Ditto do. to Treated		53.448		1.991		4.038		2.930		5.263		4.545	
XXXVI.—NATIVES.													
Nagpore Subsidiary	33,105	541	232	7,770	100	38	7	422	10	299	7	70	13
Per centage of Treated to Strength		1.634		23.470		0.114		1.274		0.903		0.211	
Ditto of Deaths to do.		0.670		0.302		0.021		0.030		0.021		0.039	
Ditto do. to Treated		41.035		1.287		18.421		2.369		2.341		18.715	
XXXVII.—EUROPEANS.													
Nagpore Subsidiary	307	...	...	230	...	18	...	39	...	40	4	6	...
Per centage of Treated to Strength		...		74.918		5.863		12.703		13.039		1.954	
Ditto of Deaths to do.		...		...		...		...		1.302		...	
Ditto do. to Treated		...		...		...		...		...		...	
XXXVIII.—NATIVES.													
Nagpore Subsidiary	5,734	...	...	1,281	10	8	1	22	2	23	1	15	3
Per centage of Treated to Strength		...		22.368		0.139		0.384		0.384		0.261	
Ditto of Deaths to do.		...		0.174		0.017		0.034		0.017		0.053	
Ditto do. to Treated		...		0.780		12.500		9.090		4.545		20.000	

For the Year 1847.

XXXVII.—EUROPEANS.

	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Nagpore Subsidiary	307	...	...	230	...	18	...	39	...	40	4	6	...
Per centage of Treated to Strength		...		74.918		5.863		12.703		13.039		1.954	
Ditto of Deaths to do.		...		...		...		...		1.302		...	
Ditto do. to Treated		...		...		...		...		...		...	
XXXVIII.—NATIVES.													
Nagpore Subsidiary	5,734	...	...	1,281	10	8	1	22	2	23	1	15	3
Per centage of Treated to Strength		...		22.368		0.139		0.384		0.384		0.261	
Ditto of Deaths to do.		...		0.174		0.017		0.034		0.017		0.053	
Ditto do. to Treated		...		0.780		12.500		9.090		4.545		20.000	

TENASSERIM PROVINCES.

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XXXIX.—EUROPEANS.

	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Tenasserim Provinces	4,390	47	20	1,439	12	242	9	667	9	659	43	413	13	237	2	230	...	11	3	3,945	111	6,455	121
Per centage of Treated to Strength		1.095		33.543		5.641		15.547		15.361		9.627		5.524		5.361		0.256		91.958		150.466	
Ditto of Deaths to do.		0.466		0.279		0.209		0.209		1.002		0.303		0.046		...		0.069		2.587		2.820	
Ditto do. to Treated		42.553		0.833		3.719		1.349		6.525		3.147		0.843		...		97.272		2.813		1.874	

XL.—NATIVES.

Tenasserim Provinces	14,984	56	28	2,407	39	18	...	664	37	204	13	155	12	1,091	22	497	6	139	34	5,231	191	6,999	281
Per centage of Treated to Strength		0.373		16.063		0.120		4.431		1.361		1.034		7.281		3.316		0.927		34.910		64.729	
Ditto of Deaths to do.		0.186		0.600		...		0.246		0.086		0.080		0.146		0.040		0.226		1.274		1.875	
Ditto do. to Treated		50.000		1.620		...		5.572		6.372		7.741		2.016		1.207		24.460		3.650		2.897	

For the Year 1847.

XLI.—EUROPEANS.

Tenasserim Provinces	100	...	...	18	...	3	...	6	...	6	...	2	...	6	...	4	...	...	...	45	...	106	...
Per centage of Treated to Strength		...		18.000		3.000		6.000		6.000		2.000		6.000		4.000		...		45.000		106.000	
Ditto of Deaths to do.		...		...		...		...		...		...		...		...		...		...		...	
Ditto do. to do.		...		...		...		...		...		...		...		...		...		...		...	

XLII.—NATIVES.

Tenasserim Provinces	1,741½	...	...	373	1	1	...	45	1	17	...	4	1	126	...	68	...	33	4	667	7	1,184	9
Per centage of Treated to Strength		...		21.418		0.574		2.588		0.976		0.229		7.285		3.904		1.894		38.300		67.987	
Ditto of Deaths to do.		...		0.574		...		0.574		...		0.574		...		...		0.229		0.401		0.516	
Ditto do. to Treated		...		0.268		...		2.222		...		25.000		...		...		12.121		1.049		0.760	

For the Year 1847.

XLI.—EUROPEANS.

XLII.—NATIVES.

[CHINA.

XLIII.—TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

	Strength.	Cholera.		Fever.		Liver.		Diarrhea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
China*	10,347	52	15	10,653	214	28	4	2,717	305	781	106	138	20	1,212	36	483	8	232	47	16,296	755	23,395	925
Per centage of Treated to Strength	.....	0.502		102.957		0.270		26.258		7.548		1.333		11.713		4.668		2.342		157.494		226.133	
Do. of Deaths to do.	.....	0.144		2.043		0.038		2.947		1.024		0.193		0.347		0.077		0.454		7.296		8.939	
Ditto do. to Treated	.....	28.646		2.008		14.283		11.225		13.572		14.492		2.970		1.656		3.017		4.633		3.953	

* There is not any return of Europeans.																							
XLIV.—For the Year 1847.																							
	Strength.	Cholera.		Fever.		Liver.		Diarrhea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
China	888	...	...	590	24	1	...	195	14	82	7	9	1	93	2	63	...	89	11	1,123	59	1,408	68
Per centage of Treated to Strength	.....	...		66.444		0.112		21.959		9.234		1.013		10.472		7.094		10.032		126.351		168.558	
Ditto of Deaths to do.	.....	...		2.702		...		1.576		0.787		0.112		0.235		...		1.238		6.444		7.659	
Ditto do. to Treated	.....	...		4.069		...		7.179		8.536		11.111		2.150		...		12.359		5.258		4.839	

ADEN.

TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

XLV.—EUROPEANS.													
	Strength	Cholera.		Fever.		Liver.		Diarrhea.		Dysentery.		Thoracia.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Aden.....	1,839	25	19	503	6	49	6	268	2	57	9	17	6
Per centage of Treated to Strength		1·869		37·565		3·659		20·014		4·256		1·269	
Ditto of Deaths to do.		1·418		0·448		0·149		0·746		0·672		0·448	
Ditto do. to Treated		76·000		1·192		12·244				15·789		35·294	
XLVI.—NATIVES.													
Aden.....	4,187	8	5	464	7	13	...	25	...	27	1	53	3
Per centage of Treated to Strength		0·191		11·081		0·310		0·597		0·641		1·265	
Ditto of Deaths to do.		0·119		0·167		...		...		0·023		0·071	
Ditto do. to Treated		62·500		1·508		...		...		3·703		5·660	
XLVII.—EUROPEANS.													
Aden.....	112	...	...	22	...	2	...	22	...	5	...	4	...
Per centage of Treated to Strength		...		19·642		1·785		19·642		4·464		3·571	
Ditto of Deaths to do.		...		...		...		...		...		...	
Ditto do. to Treated		...		...		...		...		...		...	
XLVIII.—NATIVES.													
Aden.....	1,494	73	25	389	4	1	...	67	3	24	2	6	...
Per centage of Treated to Strength		4·886		26·037		0·066		4·484		1·606		0·401	
Ditto of Deaths to do.		1·673		0·267		...		0·200		0·133		...	
Ditto do. to Treated		34·246		1·038		...		4·477		8·333		...	

For the Year 1847.

XLVII.—EUROPEANS.

XLVIII.—NATIVES.

SAUGOR AND NURBUDDA TERRITORIES.

XLIX.—TABLE Exhibiting the Admissions and Deaths of Native Troops from Nine Principal Diseases for the Year 1846; also the Total Admissions and Deaths from all Diseases, &c.

	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheumatism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Saugor and Nerbudda Territories ...	4,682	29	8	2,423	15	2	..	51	..	37	1	9	2	280	..	114	..	7	1	2,952	27	4,175	38
Per centage of Treated to Strength		0.632		52.880		0.043		1.113		0.807		0.196		6.110		2.487		0.152		64.426		91.117	
Ditto of Deaths to do.		0.174		0.337		..		..		0.037		0.043		..		..		0.021		0.589		0.829	
Ditto do. to Treated		27.586		0.619		..		..		2.702		22.322		..		..		14.285		0.914		0.910	

	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheumatism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Saugor and Nerbudda Territories ...	4,372	..	..	1,987	9	1	..	35	..	39	2	16	2	308	..	206	1	11	3	2,603	17	3,660	25
Per centage of Treated to Strength		..		46.512		0.023		0.819		0.912		0.374		7.203		4.522		0.257		60.331		85.674	
Ditto of Deaths to do.		..		0.210		..		..		0.046		0.046		..		0.023		0.070		0.397		0.585	
Ditto do. to Treated		..		0.452		..		..		5.138		12.500		..		0.485		27.272		0.653		0.633	

L.—For the Year 1847.

SOUTHERN MAHRATTA COUNTRY.

LI.—TABLE Exhibiting the Admissions and Deaths from Nine Principal Diseases for Five Years, from 1842 to 1846 inclusive; also the Total Admissions and Deaths from all Diseases, &c.

	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheumatism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Southern Mahratta Country.....	41,962	1,093	457	9,992	1,107	63	5	984	86	633	35	145	15	3,312	96	1,165	7	120	18	17,507	706	30,487	813
Per centage of Treated to Strength		2.604		23.812		0.150		2.344		1.508		0.345		7.892		2.776		0.285		41.720		72.653	
Ditto of Deaths to do.		1.089		0.254		0.011		0.085		0.083		0.345		0.061		0.016		0.042		1.652		1.937	
Ditto do. to Treated		41.811		1.070		7.936		3.658		5.529		10.344		0.785		0.600		15.000		4.052		2.666	

LII.—For the Year 1847.

	Strength.	Cholera.		Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracia.		Rheumatism.		Venereal.		Dropsy.		Total of preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
Southern Mahratta Country.....	1,009	...	...	134	...	...	...	4	...	25	2	5	...	194	1	48	...	8	...	418	3	536	4
Per centage of Treated to Strength		...		13.280		...		0.396		2.477		0.495		19.226		4.767		0.792		41.437		53.121	
Ditto of Deaths to do.		...		...		...		...		0.198		...		0.099		...		...		0.297		0.396	
Ditto do. to Treated		...		...		...		...		8.000		...		0.515		...		...		0.717		0.746	

LIII.—*Absolute Number of Cases of the Chief Diseases and Per Centage to Strength, from 1842 to 1846 inclusive.*

Absolute Number of Cases of																													
Europeans.				Natives.				Cholera.		Fevers.		Liver.		Diarrhea.		Dysentery.		Thoracia.		Rheuma- tism.		Venereal.		Dropsy.					
		Strength.		Total Deaths.		Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.	
Presidency Division.....	7,395	189	23,093	500	484	1,459	3,320	537	30	628	436	661	202	100	90	772	1,161	1,042	588	28	142	588	28	142	588	28	142	588	28
Centre Division.....	11,088	470	31,783	711	535	1,505	4,088	579	27	1,124	799	1,225	339	205	225	975	2,067	1,615	738	46	238	738	46	238	738	46	238	738	46
Southern Division	4,453	165	33,477	1,034	115	1,654	2,052	8,436	333	52	934	431	453	59	181	378	2,068	822	720	7	107	720	7	107	720	7	107	720	7
Northern Division	797	48	41,348	874	3	824	37	11,770	21	32	31	438	38	370	40	412	60	4,089	38	2,166	10	978	10	978	10	978	10	978	10
Mysore Division	9,261	218	33,937	879	127	1,351	1,233	5,613	663	60	391	660	1,104	303	105	179	669	1,691	2,468	800	12	108	800	12	108	800	12	108	800
Malabar and Canara	4,843	150	18,935	153	26	38	396	2,474	419	51	508	355	978	203	37	123	331	1,063	932	518	11	77	518	11	77	518	11	77	518
Ceded Districts	3,558	212	24,057	698	378	899	1,419	6,190	998	32	220	377	354	271	61	88	411	2,925	1,073	928	10	175	928	10	175	928	10	175	928
Hyderabad Force.....	6,800	385	47,935	1,148	97	1,969	2,243	15,452	773	88	923	863	1,855	630	149	203	702	2,675	1,952	1,463	19	90	1,463	19	90	1,463	19	90	1,463
Nagpore Force	5,394	249	33,105	507	58	541	3,515	7,770	421	38	819	422	760	969	65	70	667	1,976	885	820	20	135	820	20	135	820	20	135	820
Tenasserim Provinces.....	4,290	121	14,984	281	47	56	1,439	2,407	242	18	667	664	659	204	413	155	237	1,091	280	497	11	139	497	11	139	497	11	139	497
Aden.....	1,339	77	4,187	90	25	8	503	464	49	13	268	25	57	27	17	53	73	459	154	144	3	69	144	3	69	144	3	69	144
China	..	..	10,347	925	..	52	..	10,653	..	28	..	2,717	..	781	..	138	..	280	..	483	..	..	..	..	..	..	..	..	..
Saugor	..	..	4,582	38	..	29	..	242	..	2	..	51	..	37	..	9	..	212	..	114	..	..	..	..	..	..	..	..	..
Southern Mahratta Coun- try	..	..	41,962	813	..	1,093	..	9,992	..	63	..	984	..	633	..	145	..	3,312	..	1,165	..	..	..	..	..	..	..	..	..
Total	59,218	2,294	363,726	8,551	1,241	9,543	15,891	89,080	4,335	524	1,513	9,540	8,112	5,462	1,252	2,071	5,275	25,390	11,201	11,144	177	2,617	11,144	177	2,617	11,144	177	2,617	11,144
Deaths per cent.	3·856*	..	2·076*	..	2·095	2·623	36·834	24·491	7·319	0·146	11·000	2·623	13·668	1·499	2·144	0·569	8·907	6·980	10·914	3·063	0·298	0·719	3·063	0·298	0·719	3·063	0·298	0·719	3·063

* Deaths per cent.

LIII*.—*Absolute Number of Deaths in the Chief Diseases and Per Centage to Strength, from 1842 to 1846 inclusive.*

Absolute Number of Deaths in																	
Cholera.	Fever.		Liver.		Diarrhoea.		Dysentery.		Thoracic.		Rheumatism.		Venereal.		Dropsy.		
	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	Europeans.	Natives.	
Presidency Division.....	49	213	9	55	13	8	9	45	14	14	4	3	18	1	5	2	20
Centre Division.....	165	237	23	83	19	1	38	62	67	34	24	36	10	32	10	14	54
Southern Division	63	750	35	75	9	9	5	22	23	24	3	20	2	9	1	6	23
Northern Division	2	355	1	145	1	2	6	13	4	28	6	35	2	48	1	14	102
Mysore Division	44	587	13	81	22	7	8	22	64	15	13	19	3	16	4	6	17
Malabar and Canara	13	12	7	34	20	6	5	10	71	6	10	10	1	5	1	3	12
Ceded Districts	157	388	4	58	6	3	2	16	17	17	4	10	..	21	1	3	34
Hyderabad Force	46	804	30	104	49	9	17	21	171	31	9	23	5	17	5	6	15
Nagpore Force	31	922	70	100	17	7	24	10	40	7	3	13	6	17	4	6	32
Tenasserim Provinces	20	28	12	39	9	..	9	37	43	13	13	12	2	22	..	6	3
Aden.....	19	5	6	7	6	..	2	..	9	7	6	3	1	22	1	3	13
China	..	15	..	214	..	4	..	305	..	106	..	20	..	36	..	6	47
Saugor	..	8	..	15	..	..	..	..	1	..	2	..	..	..	..	1	1
Southern Mahratta Country ..	..	57	..	107	..	5	..	35	..	35	..	15	..	26	..	7	18
Total	609	3,681	210	1,117	171	61	125	599	543	342	105	222	33	289	29	87	422
Per centage loss—Deaths	1·028	1·012	0·354	0·307	0·288	0·016	0·211	0·162	0·925	0·094	0·177	0·060	0·055	0·079	0·049	0·023	0·116
Per centage of Cases	2·095	2·623	26·834	24·491	7·319	0·146	11·000	2·623	13·638	1·459	2·114	0·569	8·907	6·980	18·914	3·063	0·719

*Summary of Deaths per Cent. from Nine Principal Diseases for Five Years, from
1842 to 1846 inclusive.*

LV.—EUROPEANS.

	Strength of Troops.	Per Cent. Died.									
		Cholera.	Fevers.	Liver.	Diarrhoea.	Dysentery.	Thoracic.	Rheumatism.	Venercal.	Dropsy.	Of Nine Diseases.
Presidency Division.....	7,395	0.662	0.121	0.175	0.121	0.540	0.189	0.040	0.013	0.027	1.893
Centre Division.....	11,088	1.488	0.207	0.171	0.342	0.604	0.316	0.090	0.090	0.090	3.300
Southern Division.....	4,453	1.414	0.785	0.067	0.112	0.494	0.067	...	0.032	0.044	3.143
Northern Division.....	797	0.250	0.125	0.125	0.732	0.501	0.752	0.250	0.125	0.250	3.136
Mysore Division.....	9,261	0.475	0.140	0.345	0.086	0.691	0.140	0.032	0.043	0.021	1.976
Malabar and Canara Division.....	4,843	0.368	0.144	0.412	0.103	1.466	0.206	0.020	0.020	0.061	2.704
Ceded Districts.....	3,558	4.412	0.112	0.168	0.056	0.477	0.112	...	0.028	0.056	5.421
Hyderabad Force.....	6,800	0.676	0.441	0.720	0.250	2.514	0.132	0.073	0.073	0.088	4.970
Nagpore Force.....	5,394	0.574	1.297	0.315	0.444	0.741	0.055	0.111	0.074	0.074	3.689
Tenasserim Provinces.....	4,290	0.466	0.279	0.209	0.209	1.002	0.303	0.046	...	0.069	2.587
Aden.....	1,839	1.418	0.448	0.448	0.149	0.672	0.448	0.074	0.074	0.149	3.883

LVI.—NATIVES.

	Strength of Troops.	Per Cent. Died.									
		Cholera.	Fevers.	Liver.	Diarrhoea.	Dysentery.	Thoracic.	Rheumatism.	Venercal.	Dropsy.	Of Nine Diseases.
Presidency Division.....	23,093	0.922	0.238	0.034	0.194	0.060	0.017	0.077	0.021	0.086	1.651
Centre Division.....	31,783	0.745	0.261	0.003	0.195	0.106	0.113	0.100	0.044	0.169	1.739
Southern Division.....	33,477	2.240	0.224	0.026	0.065	0.101	0.059	0.026	0.017	0.068	2.831
Northern Division.....	41,848	0.858	0.350	0.004	0.031	0.069	0.081	0.116	0.053	0.246	1.794
Mysore Division.....	33,937	1.734	0.239	0.020	0.065	0.044	0.056	0.047	0.017	0.050	2.375
Malabar and Canara.....	18,935	0.163	0.179	0.031	0.032	0.031	0.052	0.026	0.015	0.063	0.517
Ceded Districts.....	24,057	1.612	0.241	0.012	0.066	0.070	0.041	0.087	0.012	0.141	2.286
Hyderabad Force.....	47,935	1.677	0.216	0.018	0.043	0.064	0.047	0.035	0.012	0.031	2.148
Nagpore Force.....	33,105	0.670	0.302	0.031	0.030	0.021	0.039	0.051	0.018	0.096	1.250
Tenasserim Provinces.....	14,984	0.186	0.600	...	0.246	0.086	0.080	0.146	0.040	0.226	1.274
Aden.....	4,181	0.119	0.167	...	...	0.023	0.071	0.525	0.071	0.310	1.229
China.....	10,347	0.144	2.068	0.038	2.947	1.021	0.193	0.347	0.071	0.454	7.296
Saugor.....	4,582	0.174	0.327	...	...	0.021	0.043	...	...	0.021	0.589
Southern Mahratta Country.....	41,962	1.089	0.254	0.011	0.085	0.063	0.345	0.061	0.016	0.042	1.682

From the preceding tables it is seen that, for the five years, from 1842 to 1846, inclusive, the strength of the Europeans ranged from 797 in the Northern Division to 11,088 in the Centre Division; and the deaths from 48 in the former to 470 in the latter. For the year 1847 the strength ranged from 100 in the Tenasserim Provinces to 2,943 in the Centre Division; and, in regard to deaths, the 100 Europeans in the Tenasserim Provinces exhibited the singular fact of not having lost a single man, while 124 died in the Centre Division. The strength of the Native troops, for the five years, ranged from 4,187 at Aden to 47,935 at Hyderabad; and the deaths at any one station ranged from 38 at Saugor to 1,148 at Hyderabad, there being 4,582 men at Saugor, while the 4,187 at Aden lost 90 men. For the year 1847, the strength of the Native troops ranged from 1,009 men in the Southern Mahratta country to 9,991 men in the Northern Division; the deaths ranged from 4 men out of the 1,009 in the Southern Mahratta country to 194 in the Northern Division. The per centage of deaths (2,284) amongst the total Europeans (59,218), for the five

years, was 3·856 per cent.*, being almost identical with the average mortality of the preceding twenty years: namely, 3·846 per cent. The per centage of deaths (8,551) amongst the Native troops (363,726) was 2·076 per cent., singularly approximating to the mortality of the preceding twenty years, viz., 2·095 per cent. For the year 1847, the deaths amongst 11,303 Europeans was as low as 2·937 per cent.; but, in the years 1835, 1836, 1838, 1839, 1841, 1843, and 1844, it had been even lower; in 1835 and 1838 scarcely exceeding 2 per cent., including Cholera; a healthiness rivalling that of a branch of the royal troops in England, viz., the Foot Guards, the mortality of which was represented at one time to be 2·16 per cent. Preliminary to entering on the influences of the chief diseases, some mention is necessary of the total amount of cases of diseases; in other words, the rate at which men are received into hospital for treatment; and in this matter a marked contrast exists between Europeans and Natives. The receptions into hospital amongst Europeans ranged from 147·7 per cent. in 1844, to 174·3 per cent. of strength in 1843. Amongst the Native troops, the receptions into hospital ranged from 66·6 per cent. in 1845, to 76·6 per cent. in 1846. For the year 1847, the cases of Europeans treated were 156·575 per cent., and of Native troops 77·64 per cent. of the strength. These numbers can only be approximations to the truth, as the same man may go several times into hospital during the year, and be counted in the returns as several men; but under any circumstances the contrast of the susceptibilities of Europeans to attacks of disease as compared with Natives is very marked. The intensity of the chief diseases in their final results indicates, that both Europeans and Natives suffer most, *in number of cases*, from fevers; the Europeans at the rate of 26·834 per cent., and the Native troops at the rate of 24·491 per cent.; but the mortality was in very different ratios at the different stations. For instance, in the Nagpore subsidiary force, the Europeans lost from fever, in the five years, 1·297 per cent., but their strength in 1847 being reduced to 307 men, they had no death by fever. At no other station did the deaths by fevers amount to a half per cent. with the exception of the Southern Division, where they amounted to 0·785 per cent. The Madras Native troops at no station lost more than one-third per cent. from fever, while in China they amounted to 2·068 per cent., and for the year 1847 to 2·602 per cent.

Next in intensity to fevers comes venereal, the CASES of which, amongst Europeans for the five years, amount to 18·914 per cent.; but the mortality from this loathsome disease, although 29 in number, never amounted to one in a thousand of the strength, except in the Northern Division, where it amounted to 1 in 797, and in the Centre Division to 1 in 1,108. In the year 1847, in the Ceded Districts, the *cases* of venereal exceeded 58 per cent. of the strength: at Hyderabad, it amounted to 39 per cent., and in the Mysore Division to 40 per cent., of the strength. Amongst the Native troops, as might be expected from the majority of the men having their families with them, the CASES of venereal amounted only to 3·063 per cent. of the strength; and the mortality per cent., at the different stations, ranged only

* As mistakes are sometimes made by inexperienced arithmeticians, I may point out, that had this average mortality been struck from taking the average of the cumulated averages of the separate divisions, the mortality would be 4·252 per cent., instead of 3·856, and the loss of the Native troops 2·510 per cent., instead of 2·076 per cent.

amongst the second place of decimals. The disease next in frequency to venereal is dysentery, amounting amongst Europeans to 13·698 per cent. of strength, but amongst the Native troops to only 1·499 per cent. The mortality from dysentery ranged from 2·514 per cent. in the Hyderabad subsidiary force, 1·466 per cent. in the Malabar and Canara, and 1·002 per cent. in the Tenasserim provinces, to less than one half per cent. in the Southern Division. Amongst the Native troops, at no station did the mortality from dysentery amount to 1 in a 1,000 of the strength, except in China, where the mortality was 1·024 per cent. or 1 in 90; and in 1847 it was 0·787 per cent., but diarrhœa carried off 2·947 per cent., or 1 in about 34 men; and in 1847 the loss was 1·576 per cent. In the per centage number of cases amongst Europeans in India, diarrhœa follows dysentery 11 per cent., but natives are only subject to it in the ratio of 2·623 per cent., the deaths amount to little more than 1 in 500 among Europeans, and 1 in 607 natives. Rheumatism follows next in intensity, standing the fifth disease with Europeans, but second with the natives; the deaths with both, however, are only indicated by the second place of decimals per cent. The sixth disease in the per centage number of cases, but not in mortality as is generally supposed, is liver amongst the Europeans, the cases amounted to 7·319 per cent.; but the deaths at no one station to three-fourths per cent. of the strength,—at Hyderabad to 0·720 per cent., so that in its worst form there was not more than 1 death to 14 cases, or 1 death in 5 years amongst 139 men; and in the Southern Division the deaths from liver did not amount to more than 1 in 495 of the strength. At Hyderabad in 1847 the deaths from liver were 0·595 per cent.; but the average for all the Divisions for that year was only 1 death in every 282 men. With the Native troops, liver can scarcely be said to have a place; in five years amongst 363,726 men there were only 61 deaths, and the per centage of cases was only 0·146, and the deaths were *nil* at several stations. At the Presidency they amounted to only 0·034 per cent, and even in China did not exceed 0·038 per cent. of the strength, or 1 in 2,587 men. In the per centage number of CASES, diseases of the lungs stand seventh, and precede cholera amongst Europeans, but not so with natives. The Europeans had 2·114 per cent. of hospital cases of the lungs, or 1 in 48 men, but the deaths at only one station (the Northern Division) amounted to three-fourths per cent. (0·752); and at Nagpore they were as low as 1 in 1,798 of the strength (0·055), and for five years the deaths were only 1 in 564 men. Amongst the Native troops diseases of the lungs have almost as little influence as the liver complaint, amounting to 0·569 per cent. of cases in the 5 years, or 1 in 290 men; and the deaths at only one station exceeded 1 in 2,000 of the strength, and even at that station (the Centre Division) the deaths were only slightly more than 1 in 1,000 of the strength, the mean mortality for five years being 1 in 1,638 natives. China again shows its malign influence by 2 in 1,000 dying of thoracia. Cholera ranks as low as the eighth disease in the per centage of its cases, but in the per centage mortality to the number of cases treated, it stands first of all the diseases, although the loss is not high to the numbers exposed to its ravages. Amongst 59,218 Europeans there were 1,241 cases, or 1 in 48 men, and 609 deaths, or 1 in 97 men, so that the per centage of cases is 2·095, and the per centage of deaths 1·028; about one-half, therefore,

of those attacked died. In the Northern Division, in five years, there were only three cases, while in the Ceded Districts there were 378; the deaths ranged from one fourth per cent. in the Northern Division to 4·412, nearly $4\frac{1}{2}$ per cent. in the Ceded Districts; and in the Centre and Southern Divisions, and at Aden, the deaths from cholera amounted to $1\frac{1}{2}$ per cent. at each station. There were scarcely any cases of cholera at any of the stations of the army in the year 1847, and in eight divisions not a single death amongst Europeans; and yet it manifested its anomalous character by carrying off 19 Europeans out of 1866 in the Mysore Division, while it only killed 2 Natives out of 8313 of the strength in the same division. As a contrast to this, 25 Native soldiers were carried off at Aden in 1847, and not a single European. Similarly, in the Southern Division, 18 Natives died of cholera, and no European. The deaths from cholera in 1847 were 1 in 514 of strength of Europeans, and 1 in 869 of the Native soldiery. The per centage of cases of cholera for five years amongst the Native troops 2·623 per cent., or 2 in about 43 men, was rather greater than amongst the Europeans, but for the five years the per centage loss, 1·102, was somewhat less than that of Europeans; and the deaths at no station amounted to half the per centage of the deaths amongst Europeans in the Ceded Districts, while the Europeans lost 4·412 per cent., in the Ceded Districts, the Native troops (2405) lost only 1·612 per cent.; but, as a contrast to this, in the Southern Division the Native troops lost, in the five years, upon the total numbers, 2·240 per cent., and the Europeans lost only, in the same division, 1·414. The minimum loss to the Native troops was 0·144 per cent., at Aden, while the Europeans, at the same place, lost 1·418 per cent. The capricious action, therefore, of this extraordinary disease, defies all rational interpretation or explanation; and the intensity of the disease appears to have been double that of the preceding 20 years. The ninth disease in intensity, as far as relates to Europeans, is dropsy; but with the Native troops it precedes liver and thoracia, and stands, therefore, seventh. Amongst the 59,218 Europeans, there were only 177 cases; and the Natives, in 363,724 men, had 2,617 cases. The mortality which, amongst Europeans was only 1 in 1537 men, was amongst the Native troops 1 in 862 men.

From the above statements, it is shown that the intensity of the nine chief diseases, as indicated by the number of cases and the number of deaths, stands in a very different sequence amongst Europeans and Natives. Amongst Europeans and Natives the intensity, as indicated by CASES and DEATHS, stands in the following order:—

	Cases.		Deaths.	
	Europeans.	Natives.	Europeans.	Natives.
1	Fevers.	Fevers.	Cholera.	Cholera.
2	Venereal.	Rheumatism.	Dysentery.	Fevers.
3	Dysentery.	Venereal.	Fevers.	Diarrhoea.
4	Diarrhoea.	Diarrhoea.	Liver.	Dropsy.
5	Rheumatism.	Cholera.	Diarrhoea.	Dysentery.
6	Liver.	Dysentery.	Thoracia.	Rheumatism.
7	Thoracia.	Dropsy.	Dropsy.	Thoracia.
8	Cholera.	Thoracia.	Rheumatism.	Venereal.
9	Dropsy.	Liver.	Venereal.	Liver.

The only diseases, therefore, in which Europeans and Natives are equally sufferers, in numbers of CASES and DEATHS, are fevers and cholera; but though fevers stand at the head in number of cases, it is cholera that stands at the head in mortality. Liver, which is the sixth in the number of cases with Europeans, is the ninth in number of cases and mortality with the native troops; but though sixth in cases with Europeans, it stands fourth in mortality. Cholera with Europeans stands eighth in number of cases, but fifth with the Natives; and though it stands first in mortality with Europeans and Natives, a somewhat smaller proportion died of the natives attacked than of the Europeans. Dropsy stands fourth in deaths with Natives, but only seventh with Europeans. The order of the cases and deaths of the other diseases do not call for particular notice.

It remains to call attention to a table of experiments to determine the thermometric effect of the sun upon the soldier's head upon the line of march; to a table of the mortality amongst Europeans at different periods of their residence in India; and to extracts from interesting observations by some of the medical officers at the different stations.

The experiments to determine the heat to which the soldier's head is exposed on the line of march, were made at Nagpore.

The head gear of the different arms of the service was first exposed to the sun's rays without a white cover, subsequently with a white cover, and lastly with a wet rag inside the helmet, cap, &c., and the following were the results:—

NAGPORE SUBSIDIARY FORCE.

LVII.—*A series of Experiments, instituted at the request of Dr. Anderson, of the Artillery, to ascertain the advantage derived from the use of a White Cover worn in the Sun over the different Military Caps and Turbans, gave the following results:—*

In the shade, the use of the white cover reduced a thermometer, placed under the cap, two degrees.

In the sun, after half-an-hour's exposure—

	Without a White Cover.	With a White Cover.
	Thermometer.	Fahrenheit Thermometer.
Horse Artillery Helmet	117°	....
Foot Artillery Dress Cap	122°	....
Peaked Kilmarnock Bonnet	119°	113°
Sepoy's Glazed Turban	130°	111°
Experiment with a wet rag inside head gear :		
Horse Artillery Helmet	102°	....
Foot Artillery Dress Cap	114°	....
Peaked Kilmarnock Bonnet	108°	99°
Sepoy's Glazed Turban	106°	102°

The head in the helmet, therefore, with a wet rag inside corresponding to the natural perspiration, was exposed to 15° less heat, by the evaporation of the moisture than without this cooling process. The

heat under the Kilmarnock bonnet was reduced by the white cover which reflects the sun's rays off from a white surface, from 119° to 113° , but the evaporation from the wet rag inside reduced the heat to 99° , the temperature being thus lowered 20° . But the poor sepoy, with his glazed turban, appeared to be the greatest gainer; the heat of his head, 130° , without a white cover, being reduced by a white cover to 111° , and 102° by means of a wet rag within the white-covered turban. The practical application of two simple scientific principles, that of a white surface reflecting the sun's rays, and of evaporation reducing temperature, are here shown to be of considerable importance to the soldier.

The second subject to which attention is called is the value of life at different periods of residence in India. The table relating to the Europeans, under the Madras Government, is for a limited number only, and for a single year, and will necessarily not express normal conditions; but there are some features of interest in it; and I am enabled to add from a Bengal medical report a similar table for 16,180 Europeans for the years 1847-8:—

LVIII.—Effect of Age and Length of Service in India upon the European Troops, for 1847.

Period of Residence in India.	Strength.	Admissions.	Deaths.	Per Cent. of Admissions to Strength.	Per Cent. of Deaths to Strength.	Per Cent. of Deaths to Admissions.
Under 1 year	774	851	33	109·948	4·263	3·877
1 to 3 years....	339	840	4	247·787	1·180	0·476
3 to 5 „	455	746	6	163·956	1·318	0·804
5 to 7 „	768	1,195	18	155·598	2·343	1·506
7 to 10 „	1,030	1,224	13	118·834	1·262	1·062
10 to 14 „	393	667	12	167·175	3·053	1·799
14 to 20 and upwards.....}	933	889	35	95·284	3·751	3·937
Total	4,692	6,413	121	136·658	2·578	1·887

LIX.—Sickness and Mortality amongst European Troops in Bengal in regard to Length of Residence for 1847-8.

Period of Residence in India.	Strength of each Class.	Admissions of each Class.	Deaths of each Class.	
Under 1 year	2,273	2,013	133	5·85
1 to 3 years	3,509	8,359	217	6·15
3 to 5 „	4,380	6,766	198	4·52
5 to 7 „	2,880	4,410	122	4·23
7 to 10 „	1,746	2,720	81	4·64
10 to 14 „	678	1,516	25	3·69
14 to 20 „	655	1,006	23	3·57
Above 20 years	49	78	1	2·1
Born in India	10	11	1	1·0
Total.....	16,180	26,879	801	4·95

No exertion appears to be spared at Madras to withdraw the European troops from habits of intemperance, by canteen regulations, by encouraging temperance societies in regiments, by supplying malt liquor to the men so cheap that they may prefer it to spirits, and also by affording them physical and intellectual amusements. Nevertheless, the reports from almost all the medical officers concur in stating, that "the chief cause of crime and mortality is drunkenness." If such be the opinions at Madras, where the mortality is *comparatively* small, they have added weight in Bengal, where a medical officer, in his report for 1847, uses the following language: "The prisoners brought to trial (Europeans) during the year, and convicted, were 294, of whom 3 were transported as felons, 16 subjected to corporal punishment, and the rest to various periods of imprisonment; and this dark catalogue had in almost every instance its origin more or less remote in drunkenness." The medical officer, freely admitting this, nevertheless states, "that the difficulty of devising a remedy for its removal appears almost insurmountable." And another Bengal medical officer reports that, at a station, from 1840 to 1848, only 33 men died from fever, but 41 died of *delirium tremens*; and there were 2375 cases of drunkenness in a strength of 3451 men. Even in temperate regiments (so called) the consumption of spirits and beer among the Madras troops is startling. For instance, the following is a return of the liquors sold in the canteen of a regiment from the 1st January to the 31st December, 1847:—

Arrack.		Brandy.	Gin.	Beer.	Porter.
Gallons.*	Drams.	Bottles.	Bottles.	Bottles.	Bottles.
7,679	2	802	270	5,613	2,514

* There are 40 drams to a gallon.

So that 307,160 drams of arrack were consumed in the canteen, and 9,199 bottles of brandy, gin, beer, and porter. This was the quantity legitimately obtained in the canteen; and how much more may have been illegitimately obtained elsewhere it is impossible to say. The average strength of the regiment was 892, and it had a teatotal society of 153 members, and a temperance society of 80 members. In a regiment at Hyderabad there were 84 temperance men, and 845 spirit drinkers; and the annual consumption per man, in the canteen, was 277 drams. In the artillery, at the same place, there were 24 temperance men, and 104 spirit driukers, who consumed 401 drams each per annum, independently of 972 bottles of beer and porter each yearly; while the European regiment only consumed 14 bottles of beer per man annually.

The medical officers generally bear testimony to the sanitary advantages, amongst well-organized bodies of Europeans, resulting from the men being provided with intellectual as well as physical amusements. In the artillery, at the mount near to Madras, each company has its library; but the Roman Catholic priest objected to members of his church belonging to them. The amusements are rackets, football,

skittles, long bullets, and chess and backgammon in the canteen and temperance rooms; such arrangements exist in all properly organized regiments. Of the 1st Madras Fusiliers it is said that the 1st January, 1848, was their hundredth anniversary, as they were embodied in 1748, from independent companies. There was a teatotal and temperance society in the regiment, and with an average strength of 892 in 1847 they lost only 6 men. Crime was comparatively rare, and the men were respectful and well conducted. In a troop of horse artillery at Jaulna, consisting of 102 Europeans, the medical officer reported that the internal economy was so good that intemperance was rare, and other crimes so few "*that not a case has required to be brought before a court martial for the last three years.*" This is almost marvellous, —102 common European soldiers without a court martial punishment amongst them for three years! In the Southern Division there was only 1 death in 1837 in a company of artillery of 53 men; and in a European regiment in the same division, 945 strong, there were only 12 deaths, at the rate of 1·27 per cent., an absence of mortality not equalled by a regiment in Europe. The medical officers attach much importance to the men being induced to drink malt liquor, by its abundance and cheapness, rather than spirits; and their sentiments appear to be embodied in the following extract from one of their reports: "The measure still adopted by the Government of supplying the canteen with porter in casks, direct from England, *continues to prove highly beneficial and conducive to the maintenance of good health among the Europeans.*" The facts and opinions in the preceding extracts are so entirely in conformity with my own observations and experience, that I venture to repeat a few words, with which I closed my analysis of the vital statistics of the armies of India, addressed to the Statistical Society early in 1847:—

"I have a strong conviction that much of European disease in India is traceable to over stimulus, and that mortality amongst the European troops will not be lessened until the European soldier is improved in his habits; until he is made to understand that temperance is for the benefit of his body, libraries for the benefit of his mind, exercise for the benefit of his health, and savings' banks for the benefit of his purse."

The final results of the comparisons between the average sickness and mortality, from 1842 to 1846, inclusive, and 1847, are shown in the following tables:—

LX.—EUROPEANS.

Years.	Per Centage of Treated to Strength.	Deaths to Strength.	Deaths to Sick Treated.
1842.....	161·341	4·205	2·606
1843.....	174·300	4·905	2·814
1844.....	147·744	2·810	1·902
1845	162·543	3·912	2·407
1846.....	149·743	3·617	2·415

LXI.—NATIVES.

Years.	Per Centage of Treated to Strength.	Deaths to Strength.	Deaths to Sick Treated.
1842.....	74·218	2·528	3·407
1843.....	67·405	2·371	3·517
1844.....	69·273	1·994	2·879
1845.....	66·616	2·062	3·096
1846.....	76·657	2·680	3·497

The average for the five years gives the following per centage from all diseases:—

EUROPEANS.

Per centage of Treated to Strength	159·215
Ditto of Deaths to do.	3·856
Ditto of do. to Treated	2·439

NATIVES.

Per centage of Treated to Strength	70·846
Ditto of Deaths to do.	2·076
Ditto of do. to Treated	3·287

The experience in 1847 gives the following results :—

EUROPEANS.

Per centage of Treated to Strength	156·575
Ditto of Deaths to do.	2·948
Ditto of do. to Treated	1·883

NATIVES.

Per centage of Treated to Strength	77·611
Ditto of Deaths to do.	1·295
Ditto of do. to Treated	1·668

From which it will be observed that although disease has been pretty nearly equally frequent, yet it is very satisfactory to notice a marked decrease, in point of severity, by nearly one per cent. less mortality, both as to the strength and number stated amongst both bodies of men in 1847. The mean mortality amongst the *Company's* European soldiers, from 1825 to 1844, inclusive, being 3·846 per cent., and the results of the five years under review, being 3·856 per cent., the close approximation would seem to testify that these figures are indications of normal conditions.

The following per centage mortality amongst Europeans, under the different governments in India, does not come within the period to which the preceding tables refer, nor is it from Madras, but its insertion will extend the range of comparisons.

Mortality amongst European Troops in India.

Years.	Bengal.	Madras.	Bombay.
1845.....	6·21	3·62	8·3
1846.....	5·04	3·64	9·32
1847.....	4·49	3·08	3·01
1848.....	5·25	1·64	2·51
1849.....	7·13	2·24	4·6

It would hence appear that there is a slight diminution in the mortality in Bengal; but there had also been similar fluctuating diminutions in the preceding 20 years. The fluctuations in Bombay, from 9·32 per cent. to 3·01 and 2·51 per cent., are remarkable; the more so when compared with the comparatively steady mortality in the Madras European troops.

In conclusion, I may add that statements of the nature of the preceding, founded as they are upon the most minute and elaborate official details, have important bearings. To the medical man, they afford the means of comparing the intensity of the same disease under different local circumstances, of investigating the history and character of diseases, and of applying remedial or ameliorating measures where practicable. The physiologist views with a curious and inquiring eye the influence of those physical, social, or moral causes which occasion the development of *latent* diseases under certain conditions; or the exacerbation of those that are patent under other conditions; not less does he contemplate and consider the prodigious discrepancies in the value of life of beings with the same organization, and living under the same climatorial conditions, but of different geographical origin and habits. The actuary finds data for regulating his estimation of the value of life, and of fixing his premiums accordingly. The statesman, the economist, and the philanthropist have their interest also in such statements. The first in relation to securing his political objects in the most efficient manner, by the smallest agency; the second desiderates a system to secure the state from a wasteful expenditure of its pecuniary resources, by a wasteful expenditure of European life in India, for it is understood that each European costs 100*l.* by the time he joins his regiment, and the 10,025 lives lost from 1845 to 1849 in all India, occasioned a loss, therefore, of above a million of money; and finally, the philanthropist is shocked by the conviction that much of the waste of European life in India is self-imposed, and that much of the intensity of the mortality might be within human control.

While the preceding tables were under press, the following statements appeared in the "Madras Government Gazette," for March last. They embrace a larger number of troops than are found in the Medical Reports of 1842 to 1847. They are not verified by any official signature; but I think it desirable to annex them for the sake of future analyses:—

TABLE Exhibiting the Number of Admissions and Deaths from the most important Diseases among the European Troops of the Madras Army during Seven Years, from 1842 to 1848 inclusive; showing also the Total Number of Admissions and Deaths during the same period, the Per Centage of Sick Treated to Strength, Deaths to Strength, and Deaths to Sick Treated.

Years.	Strength.	Cholera.		Fevers.		Liver.		Diarrhœa.		Dysentery.		Thoracic Disease.		Rheumatism.		Venereal Disease.		Dropsy.		Total from preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
1842	12,060	335	163	3,137	26	991	34	1,683	37	1,912	121	194	20	1,171	7	9,414	5	43	8	11,890	421	19,490	508
1843	12,436	443	206	4,031	50	911	36	1,663	37	2,008	138	337	27	1,171	5	9,158	5	49	11	12,850	537	21,676	610
1844	13,057	111	54	3,431	53	811	23	1,333	20	1,360	89	357	21	1,248	5	9,099	3	35	7	10,815	275	19,291	367
1845	12,548	232	124	3,971	52	930	50	1,447	27	1,633	102	179	13	1,048	9	9,570	7	31	8	11,933	400	20,396	491
1846	11,113	146	75	2,966	36	827	40	949	17	1,433	98	163	16	852	10	8,332	8	30	8	9,718	308	16,641	402
1847	11,429	32	22	2,710	30	740	41	1,232	14	1,346	116	236	23	1,047	4	8,401	4	30	1	10,834	260	17,895	337
1848	9,579½	3	2	2,677	23	701	13	822	9	841	50	1,288	25	1,064	5	3,454	5	30	9	10,910	141	17,290	174
Total	82,342½	1,307	646	22,923	270	5,911	237	9,189	161	10,531	734	2,812	156	7,631	45	18,358	30	248	52	78,940	2,342	132,679	2,889
Per centage of Treated to Strength		1.587		27.538		7.178		11.159		12.790		3.415		9.390		22.331		0.301		91.010		161.131	
Do. of Deaths to do. ...		0.784		0.327		0.287		0.196		0.903		0.193		0.054		0.047		0.063		2.844		8.508	
Do. do. to Treated		49.426		1.177		4.009		1.752		6.969		5.618		0.569		0.212		20.967		2.967		2.177	

TABLE Exhibiting Information on the same points for the Year 1849.

Years.	Strength.	Cholera.		Fevers.		Liver.		Diarrhœa.		Dysentery.		Thoracic Disease.		Rheumatism.		Venereal Disease.		Dropsy.		Total from preceding Diseases.		Grand Total of all Diseases.	
		Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
1849	9,559	43	26	2,807	12	625	32	884	19	905	72	967	34	967	2	3,901	5	22	2	10,311	204	15,569	245
Per centage of Treated to Strength		0.449		29.364		6.538		9.247		9.467		10.116		10.116		40.809		0.230		107.861		163.081	
Do. of Deaths to do. ...		0.271		0.125		0.324		0.198		0.753		0.355		0.020		0.052		0.020		2.134		2.563	
Do. do. to Treated		60.465		0.427		5.120		2.149		7.955		3.516		0.206		0.128		9.090		1.978		1.571	

TABLE Exhibiting the Number of Admissions and Deaths from the most important Diseases amongst the Native Troops of the Madras Army during Seven Years, from 1842 to 1848 inclusive; showing also the Total Number of Admissions and Deaths during the same period, the Per Centage of Sick Treated to Strength, Deaths to Strength, and Deaths to Sick Treated.

Years.	Cholera.		Fevers.		Liver.		Diarrhoea.		Dysentery.		Thoracic Diseases.		Rheuma- tism.		Venereal Diseases.		Dropsy.		Total from preceding Diseases.		Grand Total of all Diseases.	
	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
1842.....	1,786	741	19,401	384	108	13	3,180	266	947	81	392	42	5,140	62	2,467	22	373	71	225,302	8,431	55,380	1,887
1843.....	2,166	905	14,588	300	92	13	1,692	128	846	54	472	50	4,976	54	2,403	16	446	63	45,524	1,534	49,720	1,749
1844.....	1,181	519	17,584	213	113	14	1,652	77	1,046	73	461	41	5,189	77	2,178	16	694	107	3,742	1,177	50,687	1,468
1845.....	1,718	708	17,854	194	112	12	1,596	78	1,087	66	386	46	4,321	54	2,053	22	703	103	3,742	1,177	49,870	1,544
1846.....	2,699	1,208	23,503	348	116	10	1,726	68	979	71	430	49	4,944	46	2,249	11	504	67	3,742	1,177	57,249	2,002
1847.....	234	78	22,323	309	93	14	1,226	55	974	63	336	40	4,680	46	2,547	8	773	101	3,742	1,177	52,757	880
1848.....	237	93	22,536	165	76	9	1,080	32	742	53	895	66	4,461	28	1,968	6	523	80	3,742	1,177	45,245	690
Total	10,021	4,252	138,264	1,513	710	85	12,102	707	6,621	461	3,372	334	34,311	367	15,885	101	4,016	611	225,302	8,431	368,881	10,210
Per centage of Treated to Strength	2.024		27.937		0.143		2.445		1.337		0.681		6.983		3.209		0.811		45.524		73.515	
Do. of Deaths to do.	0.859		0.305		0.017		0.142		0.093		0.067		0.074		0.020		0.123		1.703		2.063	
Do. do. to Treated	42.430		1.094		11.917		5.842		6.962		9.905		1.069		0.635		15.214		3.742		2.806	

TABLE Exhibiting Information on the same points for the Year 1849.

Years.	Cholera.		Fevers.		Liver.		Diarrhoea.		Dysentery.		Thoracic Diseases.		Rheuma- tism.		Venereal Diseases.		Dropsy.		Total from preceding Diseases.		Grand Total of all Diseases.	
	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.
1849.....	269	104	13,588	133	86	6	1,159	29	631	27	911	61	3,929	26	1,984	8	520	62	28,077	456	43,785	610
Per centage of Treated to Strength	0.537		37.153		0.171		2.316		1.361		1.820		7.853		3.965		1.039		56.130		87.517	
Do. of Deaths to do.	0.397		0.365		0.011		0.057		0.053		0.121		0.951		0.015		0.123		0.911		1.219	
Do. do. to Treated	38.661		0.716		6.976		2.502		4.278		6.695		0.661		0.403		11.923		1.684		1.393	

TABLES Showing the Influence of Intemperance on Sickness and Mortality and Crime amongst the European Troops under the Madras Presidency, during the Year 1849.

TABLE I.

Showing the Sickness and Mortality amongst Various Classes of Men.

Classes	Teatottallers.				Temperate.			
Strength.....	450.				4,318.			
Diseases.	Admit- ted.	Died.	Ratio of Admission to Strength per Cent.	Ratio of Deaths to Strength per Cent.	Admit- ted.	Died.	Ratio of Admission to Strength per Cent.	Ratio of Deaths to Strength per Cent.
Fevers	141	1	31·333	0·222	768	1	17·786	0·023
Cholera .....	....	....	....	....	17	13	0·393	0·301
Dysentery, Acute and } Chronic	52	3	11·555	0·666	344	31	7·966	0·717
Diarrhœa	50	1	11·111	0·222	348	4	8·059	0·092
Other Diseases, Sto- } mach and Bowels....	23	....	5·111	....	337	6	7·804	0·138
Hepatitis, Acute and } Chronic	26	....	5·777	....	249	16	5·766	0·370
Disease of the Lungs....	43	....	9·555	....	478	17	11·069	0·393
Ditto Brain.....	14	....	3·111	....	108	1	2·501	0·023
Rheumatic Affections	27	....	6·000	....	487	....	11·278	....
Venereal ditto.....	94	....	20·888	....	1,514	1	35·062	0·023
Dropsies .....	....	....	....	....	2	....	0·046	....
All other Diseases.....	119	....	26,444	....	1,462	10	33·858	0·231
Total.....	589	5	130·888	1·111	6,114	100	141·593	2·315

Classes	Intemperate.				Total.			
Strength.....	942.				5,710.			
Fevers	190	2	20·169	0·212	1,099	4	19·246	0·070
Cholera	7	6	0·743	0·636	24	19	0·420	0·332
Dysentery, Acute and } Chronic	112	15	11·889	1·592	508	49	8·896	0·853
Diarrhœa	108	....	11·464	....	506	5	8·861	0·087
Other Diseases, Sto- } mach and Bowels....	112	2	11·889	0·212	472	8	8·266	0·140
Hepatitis, Acute and } Chronic	96	2	10·191	0·212	371	18	6·497	0·315
Disease of the Lungs....	113	4	11·995	0·424	634	21	11·103	0·367
Ditto Brain.....	82	5	8·704	0·530	204	6	3·572	0·105
Rheumatic Affections	143	1	15·180	0·106	657	1	11·506	0·017
Venereal ditto.....	477	....	50·636	....	2,085	1	36·514	0·017
Dropsies	1	....	0·106	....	3	....	0·052	....
All other Diseases.....	583	5	61·889	0·530	2,164	15	37·898	0·262
Total.....	2,024	42	214·861	4·458	8,727.	147	152,837	2·574

The above return includes the 15th Hussars, H. M.'s 25th, 51st, 84th, and 94th Regiments, and the 1st Madras Fusiliers.

TABLE II.—*Return showing the Comparative Ratio of Punishments, &c., awarded to the following Classes of Men.*

Class		Teatotalers.								
Corps		Artillery Corps.	H. M.'s 15th.	H. M.'s 25th.	H. M.'s 51st.	H. M.'s 84th.	H. M.'s 94th.	1st Madras Fusiliers.	2nd European L. I.	Total.
Strength		145	10	54	...	249	99	38	76	671
Punished by	Regimental Captains...	10	...	17	...	27	16	8	21	99
	Commanding Officers	2	...	...	...	38	2	7	8	57
Tried by	Regtl. Courts Martial...	...	...	...	...	2	1	...	...	3
	District ditto	...	...	...	...	...	...	...	...	...
	General ditto	...	...	...	...	...	...	...	...	...
Total.....		12	...	17	...	67	19	15	29	159
Ratio per Cent. to Strength...		8·275	...	31·481	...	26·907	19·191	39·473	38·157	23·695

Class		Temperate.								
Strength		1,468	603	574	886	677	723	855	825	6,611
Punished by	Regimental Captains...	600	92	103	181	131	134	114	298	1,653
	Commanding Officers	167	124	356	134	359	160	321	465	2,086
Tried by	Regtl. Courts Martial...	19	2	18	6	5	10	9	13	82
	District ditto	15	2	10	5	1	...	7	11	51
	General ditto	3	...	2	...	1	...	...	4	10
Total.....		804	220	489	326	497	304	451	791	3,882
Ratio per Cent. to Strength...		54·768	36·484	85·191	36·794	73·412	42·047	52·748	95·878	58·720

Class		Intemperate.								
Strength		345	45	88	203	136	315	155	174	1,461
Punished by	Regimental Captains...	254	11	...	87	40	98	22	212	724
	Commanding Officers	285	38	139	105	136	249	106	427	1,485
Tried by	Regtl. Courts Martial...	72	5	3	9	8	42	9	56	201
	District ditto	47	2	5	2	1	2	9	4	72
	General ditto	6	...	...	...	1	...	2	4	13
Total.....		664	56	147	203	186	391	148	703	2,498
Ratio per Cent. to Strength...		192·463	124·444	167·045	100·000	136·764	124·126	95·483	404·022	170·978

		Ratio per Cent. to Strength.		
		Teatotalers.	Temperate.	Intemperate.
Punished by	Regimental Captains	14·754	25·008	49·555
	Commanding Officers	8·494	31·553	101·642
Tried by.....	Regimental Courts Martial.....	0·447	1·240	13·963
	District ditto	...	0·771	4·928
	General ditto	...	0·151	0·889
Total.....		23·695	58·720	170·978

The returns of the year 1842 to 1846 inclusive, continued in the above tables, strengthen the improved view of the health of the European troops; the former average gave 3·856 per cent. of deaths, and the latter 3·508 per cent.; the average of the Native mortality continuing singularly stationary, viz., 2·076 and 2·063 per cent. The Temperance and Punishment Tables should be in the hands of every European soldier, to impress upon him the salutary lesson, that where 1 teatotaler is cut off, 4 intemperate men lose their lives; and in regimental courts martial, where not 1 teatotal soldier in 200 is subjected to punishment, 28 intemperate men are punished; and before district and general courts martial the teatotaler does not appear at all.